CIC®

PS-1820 PS-1830

PS-1920 PS-1930

DC REGULATED POWER SUPPLY

INSTRUCTION MANUAL

The model PS-1800 / PS-1900 series is high-precision DC regulated power supply, with its output voltage from 0 ~ 30VDC adjustable continously. Voltage regulated and current regulated are switchable automatically, and the current-limit protection point can be set arbitrarily. In the current regulated state, output current is continously adjustable in the range of 0 ~ 5A.

PS-1900 series has front-panel LCD to display output voltage and current, while PS-1800 series has analog meter for indication.

Model		PS-1820 PS-1920	PS-1830 PS-1930
Rated Output	Voltage	0 ~ 30V	0 ~ 30V
	Current	0 ~ 3A	0 ~ 5A

1. TECHNICAL DATA:

1.1 Input voltage: 110V OR 220V±10% 50Hz ~ 60Hz **(SWITCHABLE)**

1.2 Output voltage: See table

1.3 Output current: See table

1.4 Source regulation: CV $1 \times 10^{-4} + 1mV$

CC $2 \times 10^{-3} + 1mA$

1.5 Load regulation: CV $\leqslant 1 \times 10^{-4} + 2mV$ ($I_{rated} \leqslant 3A$)

CV $\leqslant 1 \times 10^{-4} + 5mV$ ($I_{rated} > 3A$)

CC $\leqslant 2 \times 10^{-3} + 3mA$ ($I_{rated} \leqslant 3A$)

CC $\leqslant 2 \times 10^{-3} + 5mA$ ($I_{rated} > 3A$)

1.6Ripple and noise: CV $\leqslant$ 0.5mVrms($I_{rated} \leqslant 3A$)

CV $\leqslant$ 1.0mVrms($I_{rated} > 3A$)

CC < 3mArms

1.7Protection: current-limit

1.8 Indication accuracy:

a. Volt-indication: LCD ± 1%+2digits; meter 2.5 degree

b. Amp-indication: LCD ± 2%2digits; meter 2.5 degree

2. OPERATION

2.1 Controls and description of front-panel

short-circuit. You should adjust the load to have the unit working properly.

2.2.3 To use the unit as constant-current source,when power switch on, turn the adjustments (5) and (6) clockwise to the end, and the (3)and (4) anticlockwise to the end. Then connect your load. Turn the current-adjustment (3) and (4) to get desired current.

2.2.4 As voltage regulated supply, both of the current-adjustments (3) and (4) must be set to their maximum values. At that time, you can set current-limit protection point arbitrarily. The setting procedure is: switch on power, connect a proper variable load and adjust its resistance to get current equal to protection point. Meanwhile, adjust current-adjustment (3) and (4) to let the CC LED in critical state. So the current-limit point is set.

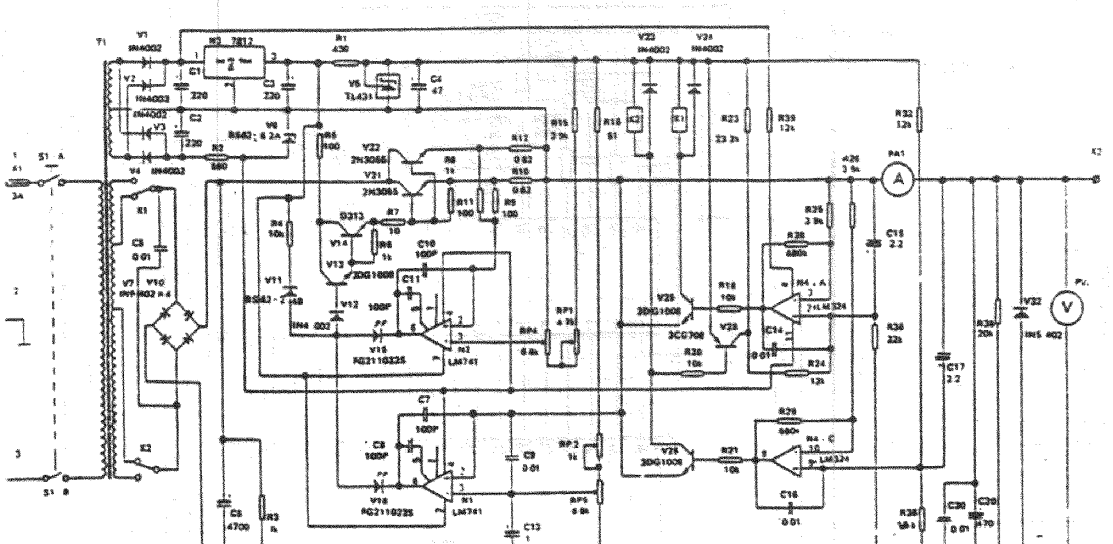
2.2.5 The LCD display is in a half and three digits (meter accuracy is 2.5 degree). To get more accurate measuring value, you should calibrate by external circuit with precision measuring instrument.

3. Cautions:

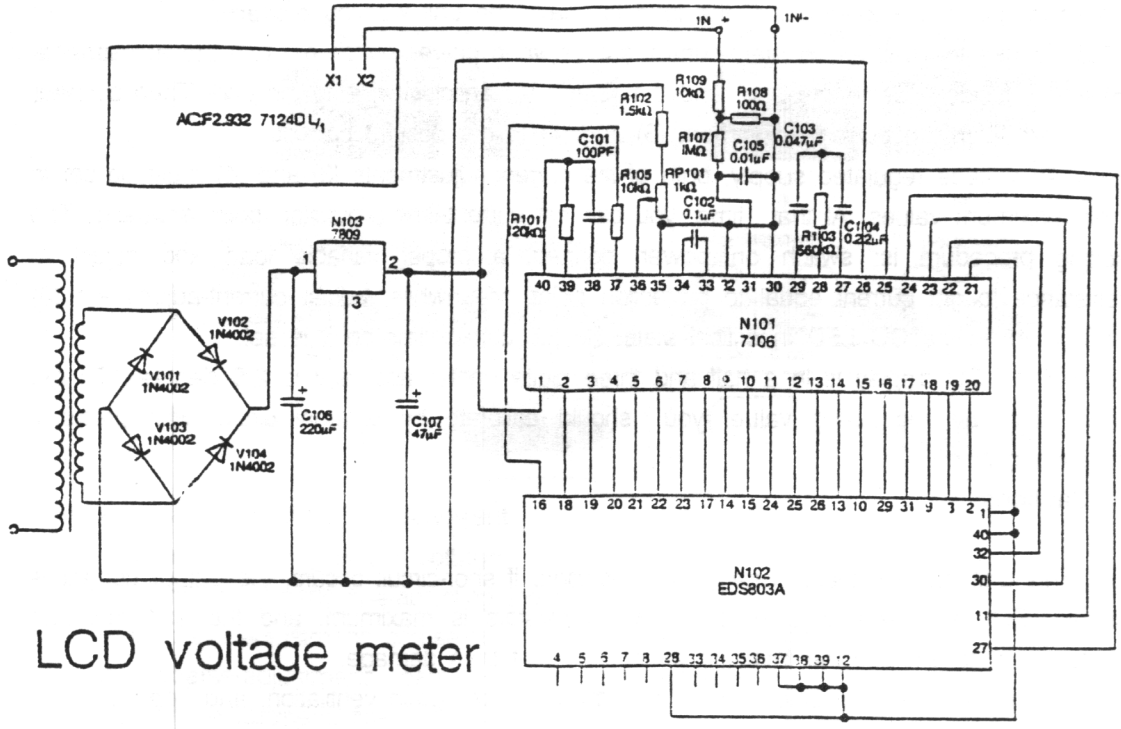
3.1 This unit has excellent current-limit protection. If shor-circuit occurs, the output current is limited. But the power loss of the power transistors is maximum, and the unit must be switched off to exclude the faults to protect the unit from damage.

3.2 When operating is finished, put it in a dry place of good ventilation, and keep it clean. If it is not in use for a long period, pull off the power supply plug for storage.

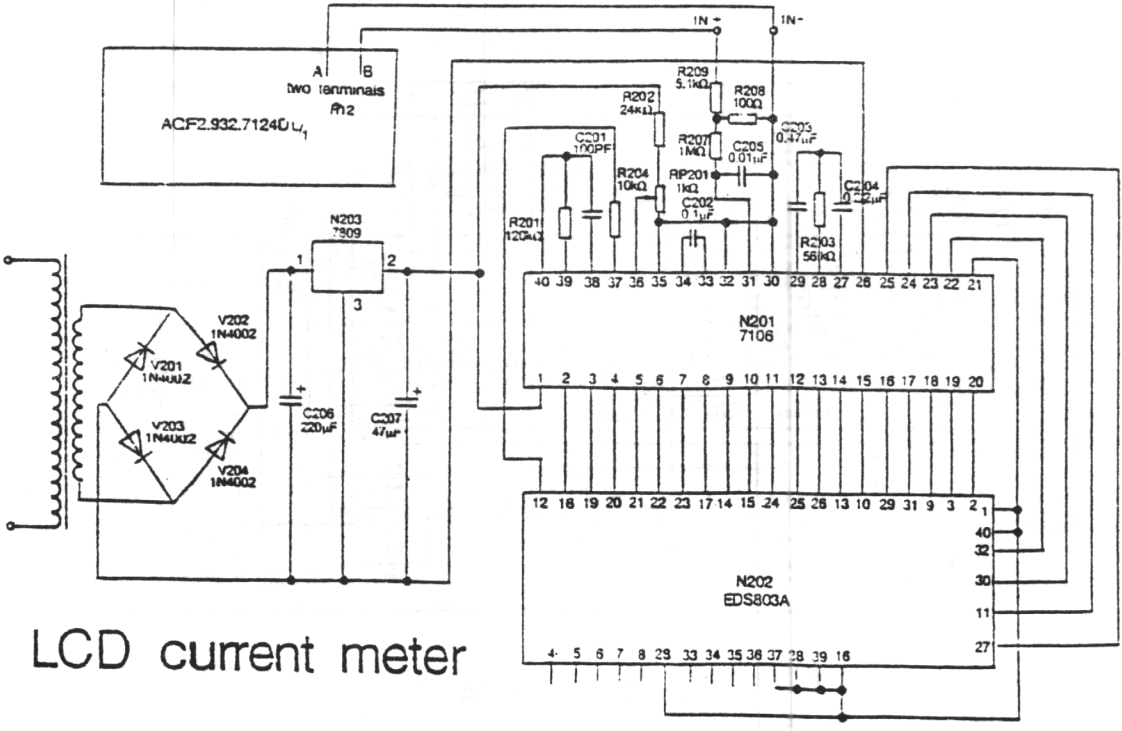
3.3 For maintenance, input voltage must be cut off.



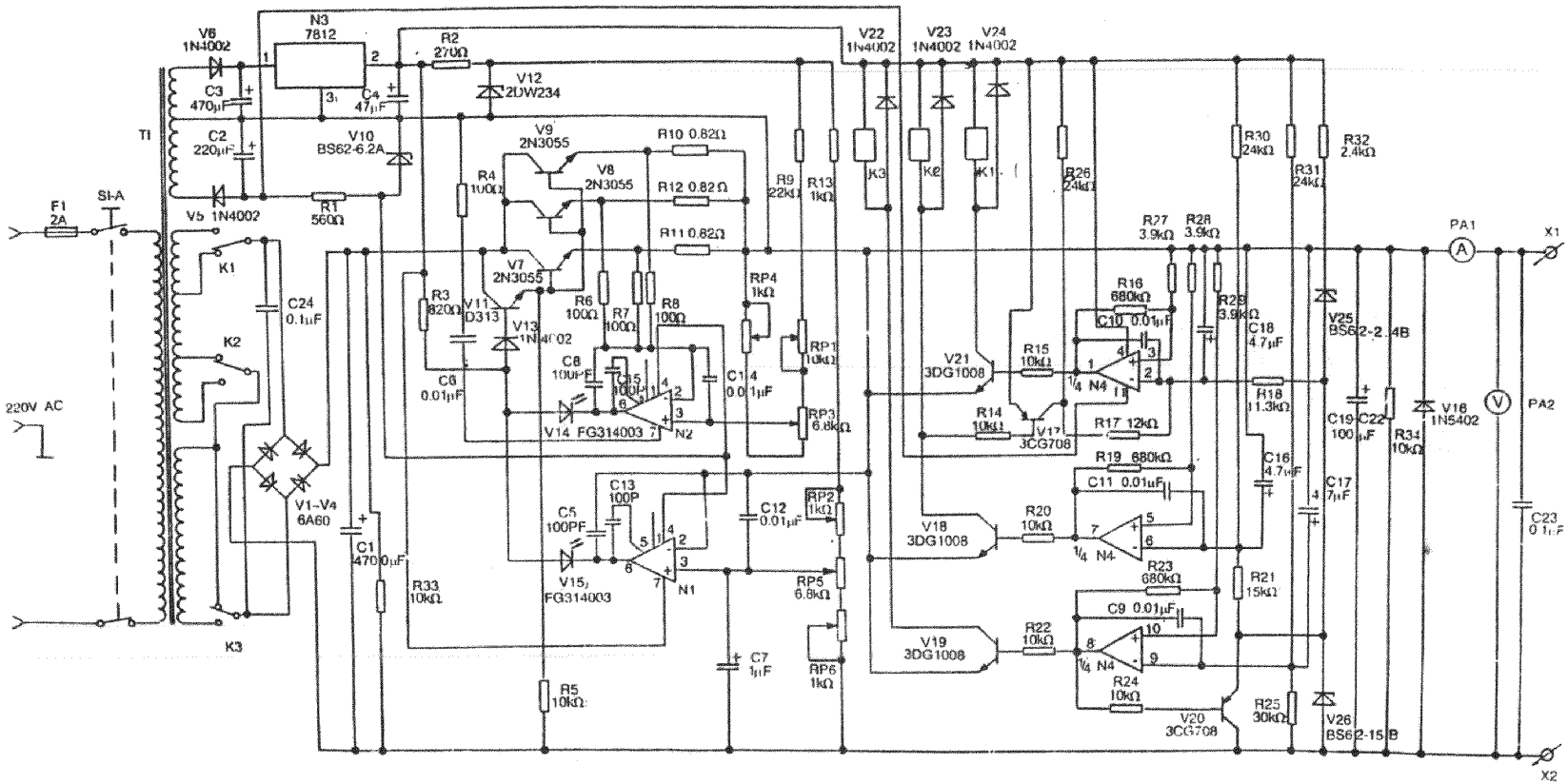
0 ~ 30V/ 0 ~ 3A



LCD voltage meter



LCD current meter


N3
7812
V6
1N4002
R2
270Ω
V12
2DW234
C3
470μF
C4
47μF
C2
220μF
V10
BS62-6.2A
T1
F1
2A
SI-A
V5 1N4002
RT
560Ω
V9
2N3055
V8
2N3055
R10 0.82Ω
R12 0.82Ω
R11 0.82Ω
R4
100Ω
R9
22kΩ
R13
1kΩ
V22
1N4002
V23
1N4002
V24
1N4002
K3
K2
K1
R26
24kΩ
R30
24kΩ
R31
24kΩ
R32
2.4kΩ
R27
3.9kΩ
R28
3.9kΩ
PA1
X1
V7
2N3055
R3
820Ω
V11
D313
V13
1N4002
R6
100Ω
R7
100Ω
R8
100Ω
RP4
1kΩ
RP1
10kΩ
RP3
6.8kΩ
C6
0.01μF
C8
100pF
C14
0.01μF
V14 FG314003
N2
R16
680kΩ
C10 0.01μF
V21
3DG1008
R15
10kΩ
R14
10kΩ
V17
3CG708
R17 12kΩ
R29
3.9kΩ
C18
4.7μF
R18
11.3kΩ
V25
BS62-2.4B
C19
100μF
C22
R34
10kΩ
V16
1N5402
PA2
V
X2
K1
K2
K3
C24
0.1μF
220V AC
V1~V4
6A60
C1
4700μF
R33
10kΩ
C13
100P
C5
100PF
V15
FG314003
N1
C12
0.01μF
RP2
1kΩ
RP5
6.8kΩ
RP6
1kΩ
C7
1μF
R5
10kΩ
C16
4.7μF
C17
7μF
C23
0.1μF
R19 680kΩ
C11 0.01μF
V18
3DG1008
R20
10kΩ
N4
R23
680kΩ
R21
15kΩ
C9 0.01μF
V19
3DG1008
R22
10kΩ
R24
10kΩ
V20
3CG708
R25
30kΩ
V26
BS62-15B

0～30V / 0～5A